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ABSTRACT

The "Research Memorandum," a quarterly publication initiated in December 1972 by the Office of Educational Development and Research of the Metropolitan Junior College District of Kansas City, Missouri, is devoted to the investigation and delineation of research problems common to public and private institutions of two-year college education. Findings from various studies are stated in the context of an empirical research model. In this issue of the "Research Memorandum," this model, its essential objectives and component units are discussed in a summary of a document entitled "Prospectus on Institutional Research in the Metropolitan Junior College District. Other studies reported on are: 1972 Summer Semester Enrollment Analysis; Women's Status in Higher Education and the Professions: Metropolitan Junior College District, 1971-1972. The Educational Development Grants Program to support part-time faculty study and research is described. (DB)

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RESEARCH MEMORANDUM

METROPOLITAN JUNIOR COLLEGE DISTRICT · KANSAS CITY, MISSOURI

OFFICE OF EDUCATIONAL DEVELOPMENT AND RESEARCH

March, 1973

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The Publication

The Research Memorandum is a quarterly publication initiated in December, 1972 by the Office of Educational Development and Research of the Metropolitan Junior College District of Kansas City, Missouri. The objective of the "Memorandum" is to provide a means by which the rapid dissemination of research findings obtained in the Metropolitan Junior College District can be accomplished at regional, state, and national levels of organizational hierarchy.

Emerging trends in two-year college research indicate that communication of research findings to practitioners in the field and education decision-making personnel has far reaching effects on institutional policy and goals. For example, practitioners in institutional research have begun to redefine functional goal objectives in such a way that intra-institutional data can become a standard for various educational decisions within and between diverse institutions of higher education. In greater detail, as both public and private institutions of two-year college education have come to experience similar constraints relative to institutional development and educational practice, a need for information common to all colleges has materialized. Therefore, data collected in a single institution can be translated into educational policy for a number of different institutions depending on the nature and diversity of educational characteristics in each.

In this vein, the Research Memorandum is devoted to the investigation and delineation of research problems common to public and private institutions of two-year college education. Findings discerned from various studies are stated in the context of an empirical research model which is designed in such a way as to provide maximum potential for articulation and application of research results within diverse institutions of two-year college education. This model, its essential objectives and component units, is the subject of a document entitled "Prospectus on Institutional Research in the Metropolitan Junior College District" and is presented in summary form below.

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Prospectus on Institutional Research

The objective of the "Prospectus" is to provide an analytical framework for on-going research activity conducted in the Metropolitan Junior College District.

The Educational Context For Research. Emerging research trends, relevant to the two-year college as a burgeoning locus of higher education, indicate that three major developments are now beginning to take place. These developments are less a matter of research technique than of recognizing the need for research findings to aid in decision making. One

such development is a function of the greater emphasis placed by education decision-making personnel on "applied" research as opposed to "theoretical"--an occurrence which had led to the creation of applicable rather than abstract models. The increase in number of research projects developed in response to specific problems rather than on investigation in general, appears to reflect a major change of goal in institutional research. It is evidence of an evolution in educational research from "producer orientation" to "user orientation."

A second development is the redefinition of functional objectives of institutional research relevant to the community college. Specifically, research efforts are shifting to include such topics as enrollment projections, career education, finance models, administrative organization, governance, instructional effectiveness, etc., from those that merely tabulate student characteristics. For example, researchers are concentrating on the identification of specific areas of curriculum in response to individual needs rather than on curriculum development in general. Also related are community surveys to determine the current educational needs of different parts of the community. Special solutions are sought for subcultural needs of particular segments of the population: rural, urban, ethnic, elderly citizens, and women's needs.

Finally, institutional research has become more sensitive to the need for empirical information directly related to characteristics of the community college as an organization responsive to community and legislative agencies. Currently a premium is placed on information needed "in" the community college as contrasted to information developed "about" the community college. This development is clearly indicated in terms of the extensive amount of research undertaken in career development and accountability.

A Model for Research. Reflective of the emerging trend toward accountability studies in two-year college research is the following model. This model is intended to articulate and define the direction, organization, and methodology of institutional research efforts undertaken in the Metropolitan Junior College District. The model is presented on page 3 and is descriptive of a conceptual framework for institutional research in the community-junior college.

In terms of the model, it is possible to formulate and define a number of different substantive data bases for investigation. For example, major district studies have been completed that relate to women's status in higher education and student attrition in the institutional community. Future studies will be concerned with enrollment projections; student achievement and goal attainment; faculty values; student activities; grade system evaluation; career education and manpower needs; counselor and academic advisory effectiveness; credit by examination; community service projections; emerging governance models and organizational response; and finance models for the urban community college. It is significant to note that a major investigation initiated during the Fall Semester of 1972 was the longitudinal examination of instructional effectiveness in the remedial level English and math courses offered in member colleges of the Metropolitan Junior College District. The research design of this study is organized in such a way as to maintain generic cognizance of national and regional trends in remedial education. In this context, it is anticipated that the investigation will have far-reaching implications for instructional development in a national as well as regional spectrum of public community colleges.

A second concern represented in the model is the development of a comprehensive data pool for the Metropolitan Junior College District and its member colleges. Data are collected, recorded, and conserved that are relevant to 1) Student Characteristics (demographic, intellective, perceptual-attitudinal, and basic classification characteristics);

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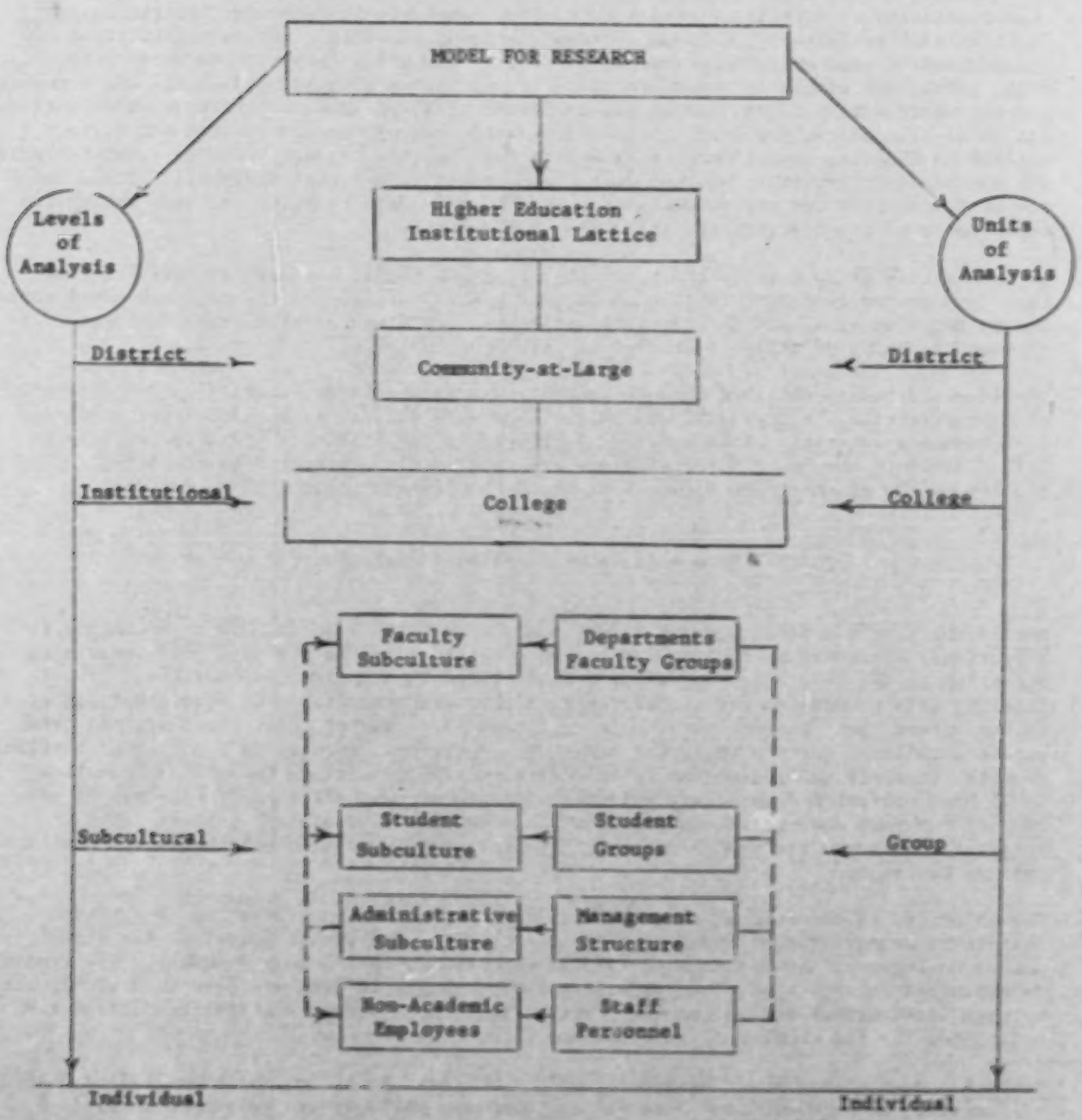

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2) Instruction (curriculum program characteristics, faculty load, grading practices, instructional time utilization, occupational program trends, emerging curriculum models, instructional effectiveness, and distribution of students in curricular fields of study); 3) Manpower (market conditions and faculty distribution within curricular fields, characteristics of faculty, administration, and non-academic personnel, attrition among institutional subcultures, degrees awarded, patterns of administrative organization and reorganization, and emerging personnel needs); 4) Community (general education needs data, models for campus-outreach education, occupational program needs data, and community service needs data); 5) Facilities (space inventories and space utilization, alternatives for space allocation, and facilities development); and 6) Finance (budget and factors related to budgets, operational costs and factors related to cost, faculty, administration, and non-academic salaries, student costs, and institutional cost analyses). These data are used primarily for the determination of rational administrative decision making and improvement of the district and its member colleges.

It is a matter of concern in the model that research should be "user-oriented" rather than "producer-oriented." In this sense, the primary utility of the research model rests in its function as a base for the investigation of applied research problems appropriate to specific units of analysis at various levels of analysis.

Therefore, data are obtained through procedures and techniques selected by the criterion of appropriateness to the level and unit of analysis as well as essential properties of the phenomena question. This strategy developed in the form of a stepwise progression will constitute the basic format for research publications prepared by the office of Educational Development and Research of the Metropolitan Junior College District.

1972 Summer Semester Enrollment Analysis

During the past two years, research components associated with the higher education institutional structure at federal, state, and institutional levels have paid increasing attention to the development of a phenomenen called "discontinuous education." Specifically, this phenomenen may be described as the segmentalization of enrollment patterns to the extent that students may choose to attend one semester, omit the next, and then repeat enrollment for the following semester. Therefore, insofar as a number of research reports (Carnegie Commission on Higher Education, 1968; American Council on Education, 1972) have presented documentary evidence that almost one-half or approximately 45 percent of two-year college students follow a discontinuous enrollment pattern, it is relevant to examine the status of summer student enrollment in the Metropolitan Junior College District.

The objective of the Summer Semester Enrollment Report was to present narrative with respect to summer student enrollment (headcount, FTE, and credit hours) at the three member colleges of the District in 1972 as compared to 1971 Summer Semester. The report is organized in such a way that significant differences in data are described within and between institutions and influential factors related to summer semester enrollment are delineated for the complex of institutions.

Results. Summer enrollment headcount, FTE, and credit hours for the years 1971 and 1972 at Longview, Maple Woods, and Penn Valley Community Colleges are presented in Table I. Through comparison (by inspection) of 1971 and 1972 Summer Semester headcount, it is evident that although day enrollment decreased at a moderate rate at both Maple Woods and Penn Valley (3% and 2% respectively), Longview experienced an increase in day enrollment of 11 percent. A similar trend was observed in analysis of evening enrollment

Table I. Summer Semester Enrollment Comparisons: 1971 and 1972 (FTE, Headcount, Credits)

	LONGVIEW			MAPLE WOODS			PENN VALLEY			TOTAL		
	FTE	Head Count	Credit Hours	FTE	Head Count	Credit Hours	FTE	Head Count	Credit Hours	FTE	Credit Hours	Credit Hours
1971												
Day	109	475	2,625	71	317	1,721	275	1,243	6,594	455	2,035	10,940
Eve.	42	288	1,006	29	173	687	131	823	3,144	202	1,284	4,837
Total	151	763	3,631	100	490	2,408	406	2,066	9,738	657	3,319	15,777
1972												
Day	113	526	2,705	72	308	1,730	264	1,224	6,324	449	2,058	10,759
Eve.	60	414	1,448	32	207	776	148	856	3,557	240	1,477	5,781
Total	173	940	4,153	104	515	2,506	412	2,080	9,881	689	3,535	16,540
% Inc.: 1971-1972												
Day	4%	11%	3%	1%	(3%)	1%	(4%)	(2%)	(45%)	(1%)	1%	(2%)
Eve.	43%	44%	44%	10%	20%	13%	13%	4%	13%	19%	15%	20%
Total	15%	23%	14%	4%	5%	4%	1%	1%	1%	5%	6%	5%
FTE Budget Estimation:	175			125			450			750		

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headcount: Maple Woods and Penn Valley felt a reasonably high enrollment increase of 20 percent and 4 percent respectively, while Longview experienced a significant increase of 44 percent percent over 1971. The college increases in summer enrollment growth relative to combined day and evening student headcounts suggest that factors unique to each college as well as factors other than or in addition to college climate may influence enrollment at each college.

District enrollment patterns examined in relation to departmental classification maximize the effect of intra-institutional variables on enrollment. For example, as is demonstrated in Table II, Longview, Maple Woods, and Penn Valley Community Colleges show considerable differentiation in terms of enrollment quotas when broken down according to curriculum program and major department. Clear distinctions occur between the three colleges as Maple Woods reflects a greater distribution (64 percent) of students enrolled in the Arts and Sciences curriculum programs whereas students at Longview and Penn Valley demonstrate a greater tendency to enter the Occupation curriculum programs. Furthermore, when analysis is conducted according to major department, it is evident that a greater number of students at Maple Woods Community College enroll in English and the humanities and arts of the Arts and Sciences program and secretarial science of the Occupational program. Quite to the contrary, enrollment patterns at Longview Community College indicate that a larger proportion of students place emphasis upon the natural science curriculum (Arts and Sciences) and business curriculum (Occupational programs) than is characteristic of Maple Woods or Penn Valley. Finally, the largest proportion of students at Penn Valley are concentrated in the social sciences and a variety of specialized occupational fields. These data are interpreted to mean that the number and variety of curricular offerings at each college may to a greater or lesser extent act as a stimulus in terms of the distribution of summer enrollment.

Implications. If an objective of the summer semester enrollment report had been to expand enrollment data into an analysis of differential student values according to curriculum field choice within each college, it might be proposed that moderately different value sets exist among students attending Longview, Maple Woods, and Penn Valley Community Colleges. Generally speaking, previous research (Katz and Allport, 1931; Goldsen, 1951; Bowers, 1964, and Harp and Taietz, 1966) has demonstrated that students entering the liberal arts curriculum (i.e., English, social sciences, and humanities) are more likely to express their general orientation toward college and their specific reasons for attending college in terms of acquiring a basic education, developing an appreciation of ideas, and developing the capacity to think critically and to make rational judgments. By contrast, students in the natural sciences, engineering, education, nursing, and business administration tend to place greater emphasis on vocational training and career preparation than do students in the liberal arts. Inasmuch as the data indicate that students attending Longview, Maple Woods, and Penn Valley Community Colleges elect to enroll in different curriculum fields at a variable frequency rate during summer semester, it is logical to suggest that perhaps the colleges are serving differential student needs.

A number of other factors may account for institutional differences in summer enrollment and distribution. Factors such as the location and length of summer semester course (on-campus or in college-outreach centers) as well as scheduling and advertising of the summer session are a matter of college determination and can be controlled quite easily. Extra-institutional influences are not so easily controlled, such as the course offerings and course schedules at other institutions, the availability of summer employment to students, and the students' reason(s) for attending the summer semester.

It would be interesting to examine a heretofore unresearched category of social psychological factors affecting summer term enrollment: the students' reasons and motivations

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Table II. 1972 Summer Semester Enrollment According to Curriculum Program and Major Department

	Arts and Science							
	English		Humanities and Arts		Natural Science		Social Science	
College	N	%	N	%	N	%	N	%
Longview	186	14%	96	7%	134	10%	348	26%
Maple Woods	140	18%*	87	11%*	47	6%	224	29%
Penn Valley	474	14%*	252	8%	212	6%	1,027	31%*
District	800	14%	435	8%	393	7%	1,599	29%

	Occupational													
	Busi-ness		Data Proc.		Sec. Sci.		Math.Eng. Phy.Tech.		Day Care		Law Enf.		Nur-sing	
College	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Longview	228	17%	50	4%	55	4%	247	18%						
Maple Woods	59	8%	--	--	65	9%	138	18%						
Penn Valley	262	8%	126	4%	164	5%	596	18%	160	5%	50	1%	15	.5%
District	549	10%	176	3%	284	5%	981	18%	160	3%	50	1%	15	--

*Symbol meaning percentage factor of greatest magnitude

for attending the summer session. This is certainly not subject to district control by any direct means but may be related to variables that each college does control (i.e., number and variety of course offerings, length of the summer semester, course scheduling and advertising, etc.). Specifically, it would appear that increasing enrollment of evening students at each college might be a result of felt student needs to lessen the number of courses they would be required to take during the regular year, a desire on their part to expand their knowledge base in terms of a particular curriculum offering, or a desire on their part to fulfill a military or job obligation. Similarly, an overall increase in enrollment of day students at Longview, Maple Woods, and Penn Valley, albeit a moderate increase, might be interpreted as reflecting a motivational drive on the part of the full-time student to accelerate the accumulation of acceptable credits for transfer, to participate in smaller classes with a more personalized style of instruction, to enter into an instructional relationship with a faculty member of high personal and intellectual appeal, to stay in school as a means of maintaining the "study habit" if summer employment cannot be obtained, or to make up a grade point deficiency.

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Women's Status in Higher Education and the Professions: Metropolitan Junior College District, 1971-1972

Sex discrimination associated with undergraduate student tenure in diverse institutions of higher education as well as membership within a distinctive network of role and status relationships which comprise the basic fabric of faculty, administrative, and non-academic professional subcultures, does not simply begin when a woman elects to enter the college environment as a student or employee. Rather, its roots reach far back to the cumulative effects of earlier sex differentation processes: socialization for "appropriate" sex roles; differential treatment accorded to males and females by parents, teachers, peers, and various significant other persons encountered throughout adolescence and early adulthood; differential opportunity for access and admission to undergraduate schools; and perhaps foremost, the divergence between males and females in terms of curricular fields available for selection and entrance. As a result, it is conceivable that when women begin to crystallize their final educational and occupational objectives, they may bring to bear entirely different interests, aspirations, expectations, educational background, and life experiences on the decision-making process than those of their male counterparts.

Framework of the Study. The objective of this study was to focus upon latent factors involved in sex role determination in higher education and the professions. Some of the factors which may differentiate between men and women in higher education are presented in the status equilibration model on page 9. These factors are organized in such a way that primary consideration was given to (1) the life-phase sequence in which sex discrimination is most likely to occur (i.e., adolescence, early adulthood, adulthood) as well as (2) the primary referents who are most apt to influence educational decision making during each life phase.

Briefly, as is apparent in the model, there are three major life phases in which sex role discrimination takes form: Adolescence, Early Adulthood, and Adulthood. A second dimension of the model accounts for the existence of ten discriminant factors which may lead to the equilibration of sex role status in higher education and the world of work.

Lastly, a symbolic interaction perspective is utilized to focus attention on a third dimension of the status equilibration model: the role and status structure of various classes of persons who as a function of their social and professional status in familial, economic, and educational institutions in American society, have the capacity to influence educational decision-making processes undertaken by women. Therefore, the proposition was advanced that sex role differentiation and socialization, the operational stages of which are delineated in the equilibration model, are causative factors in the gradual evolution of sex discrimination in higher education and the professions.

Method and Procedure. The general procedure for this study was to collect educational and occupational data on the population of male and female students at each member college of the Metropolitan Junior College District, the population of non-academic staff employed by the district, the population of academic faculty maintaining full-time franchisement in Longview, Maple Woods, and Penn Valley Community Colleges, and the population of professional administrative personnel. Data were collected and tabulated relevant to (1) institutional sex ratios, (2) sex distribution in curriculum programs, (3) sex distribution on non-college occupational program advisory committees, (4) sex membership and participation in student activities organizations, (5) salary range ascription by sex for occupational and transfer program graduates, (6) sex distribution of non-academic Metropolitan Junior College District personnel, (7) patterns of promotion

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Model of Latent Determinants of Sex Discrimination in Higher Education and the Professions

Life Phase	Discriminant Factor		Primary Referents for Status Equilibration
I Adolescence	(a) Secondary school graduation		Parents, high school faculty, agemates
	(b) Expressed intention to enroll in college		Parents, high school faculty, agemates
	(c) Actual admission to college		College administrative personnel
II Early Adulthood (college tenure)	(a) Admission to a specific curricular program		Parents, college faculty, college administrative personnel
	(b) College graduation: associate or baccalaureate degree		College faculty and administrative personnel
III Adulthood (post college)	<u>Academic</u>	<u>Non-Academic</u>	
	(a) Academic personnel in higher education	Clerical and supervisory personnel in higher education and the professions	College faculty and professional contacts
	Decision to enter graduate education program	Vocational entry (salary and rank)	College faculty and professional contacts
	(b) Actual admission to and tenure within graduate program	Job tenure, promotion, and work activities	Graduate faculty and professional peers
	(c) Graduation and job entrance (salary, rank, and tenure)		Graduate faculty
	(d) Promotional patterns and professional activities		Professional peers

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of non-academic personnel, (8) sex distribution of academic Metropolitan Junior College District administrative personnel, (9) patterns of promotion of administrative personnel, (10) sex distribution of district member college faculty, (11) sex distribution for membership of district-wide and member college organizational committees.

The formal population consisted of 9,282 persons identified as full-time and part-time students, 237 persons formally recognized as full-time faculty, 27 persons maintaining an administrative franchisement with the Metropolitan Junior College District, and 188 persons classified as non-academic personnel. During the Summer Semester 1972, frequency data were tabulated relevant to each of the ten variables above as determined according to the following classification scheme:

1. Full-time/part-time students (N=9,282)

   (a) institutional sex ratios
   (b) sex distribution in curriculum programs
   (c) sex membership and participation in student activities organizations
   (d) salary range ascription by sex for occupational and transfer program graduates

2. Non-academic personnel (N=188)

   (a) sex distribution of non-acsdemic personnel within member colleges of the Metropolitan Junior College District
   (b) patterns of promotion among non-academic personnel

3. Administration (N=27)

   (a) sex distribution of administrative (academic) personnel

4. Full-time faculty (N=237)

   (a) sex distribution of district member college faculty
   (b) sex distribution of faculty in terms of membership on college and district-wide organizational committees

5. External advisory committees (N=22)

   (a) sex distribution on non-college occupational program advisory committees

The frequency tabulations were organized in terms of a cross-sectional format with attention focused on the independent variables of women's status in higher education and the professions at one isolated point in time. The data were analyzed using a basic comparison (by inspection) method by which raw percentage differentials between data categories were separated and described. This method provided a foundation for the baseline assessment of sex-linked differences in college selection and entrance, curriculum program choice, occupational salary ascription, patterns of promotion, sex distribution of faculty, and female membership on academic committees.

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Results. Several findings of primary significance were derived from the study. These findings are relevant to: (1) sex distribution of students enrolled in member colleges of the district, (2) sex distribution of students in occupational and transfer curriculum programs of the district, (3) occupational distribution and salary range exception of male and female graduates of the Metropolitan Junior College District, (4) sex distribution of non-academic personnel in the district, (5) status of women in administration in the Metropolitan Junior College District, (6) sex distribution of faculty in the district, and (7) sex distribution of committee membership established in the Metropolitan Junior College District. Data pertaining to these factors are presented in the tables that follow.

On the basis of data in Table I, it would appear that women are somewhat under-represented (43 percent) in the total enrollment composition of the Metropolitan Junior College District.

Table I. Sex Distribution of 1971-1972 Enrollment of Member Colleges of the Metropolitan Junior College District

College	Semester: Fall 1971 Male		Fall 1971 Female		Spring 1972 Male		Spring 1972 Female		Total Male		Total Female	
Longview	1758	66%	934	34%	1589	67%	790	33%	3347	66%	1724	34%
Maple Woods	1072	62%	661	38%	943	62%	567	38%	2015	62%	1228	38%
Penn Valley	2919	52%	2256	48%	2065	49%	2288	51%	4684	51%	4544	49%
District	5259	58%	3841	42%	4797	57%	3645	43%	10,056	57%	7486	43%

If a more detailed analysis were pursued in which comparison was undertaken of the raw percentage distribution of the female enrollment in the district with the general percentage distribution of females aged 15 through 19 in the Kansas City metropolitan area in 1971, it is estimated that district enrollment (by sex proportion) would fall 9 percent short (43/100) of the total female proportion (52/100) represented in the Kansas City metropolitan population. This comparison would seem to indicate that the 9 percent disparity between sex proportionality in the district and the general population is reflective of a relative lack of female involvement in two-year college education directly following completion of secondary-level education. A result of several research investigations (Knoell, 1962; Medsker and Trent, 1965; Cross, 1968; Carnegie Commission on Higher Education, 1968; American Council on Education, 1972) undertaken by various higher education personnel has been the documentation of a phenomenen known as discontinuous or "delayed" education--a phenomenen wherein post-secondary educational plans are delayed until personal, social, financial, and/or occupational stability is obtained. Therefore, a logical outcome of discontinuous education is the relative decrease in proportion of women involved in higher education at the age levels seventeen to nineteen.

A second variable relevant to systematic assessment of women's status in higher education is the sex distribution of students in the arts and science and occupational curriculum programs in member colleges of the Metropolitan Junior College District. Table II indicates that women students are predominantly represented in sterotypical sex-linked

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TABLE II. Sex Distribution in Curriculum Programs Inclusive of Enrollment in the Metropolitan Junior College District

	First Year				Second Year				Total			
	Male		Female		Male		Female		Male		Female	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
I. Business Related:												
A. Acctg/Gen.Bus.	96	59	32	20	32	47	13	20	128	56	45	20
B. Sec/Clerical	1	1	108	68	1	1	38	58	2	1	146	65
C. Hotel/Res.Mgmt.	16	10	2	1	15	22	2	3	31	14	4	2
D. Mid.Mgmt.	39	24	14	9	17	25	10	15	56	24	24	10
E. Other	9	6	3	2	3	4	2	3	12	5	5	2
TOTAL	161	100	159	100	68	100	65	100	229	100	224	99
II. Data Processing Technique:												
A. Data Processing	96	100	30	100	41	100	9	100	137	100	39	100
TOTAL	96	100	30	100	41	100	9	100	137	100	39	100
III. Allied Health and Medical Technology:												
A. Dental Asst.	1	2	25	8	0	--	21	19	1	1	46	11
B. Nursing Program	9	17	184	60	6	22	66	59	15	19	250	60
C. Inhal.Therapy	28	52	18	6	16	59	11	10	46	54	29	7
D. Other	16	30	78	26	5	19	13	12	21	26	91	22
TOTAL	54	101	305	100	27	100	111	100	83	100	415	100
IV. Engineering & Industrial Technology:												
A. Aerospace Tech.	22	10	0	--	8	9	1	50	30	9	1	5
B. Auto.Tech.	59	25	0	--	21	22	0	--	80	25	0	--
C. Electronics	45	19	0	--	14	15	0	--	59	18	0	--
D. Drafting	34	15	2	11	16	17	1	50	50	15	3	14
E. Other	71	31	17	89	33	36	0	--	104	32	17	81
TOTAL	231	100	19	100	92	99	2	100	323	99	21	100
V. Public Service Relations:												
A. Adm.of Justice	86	69	3	5	21	66	3	23	107	69	6	9
B. Day Care	2	2	49	84	0	--	8	62	2	1	57	88
C. Other	36	29	6	10	11	34	2	15	47	30	8	12
TOTAL	124	100	58	100	32	100	13	100	156	100	71	100
VI. Occupational Program Total Enrollment:	666		571		260		200		938		765	
College Transfer Programs: TOTAL	1408		839		846		452		2264		1291	
Special/Unclassified Curriculum Programs: TOTAL	485		469		1639		1600		2124		2069	

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occupational programs such as secretarial science, allied health, and medical technologies--specifically, 99 percent of all part-time and full-time students enrolled in secretarial science are women.

The data reveal that a virtual non-representation of women in traditionally male-dominated curriculum fields such as aerospace technology, automotive technology, electronics, drafting, traffic engineering technology, and engineering technology is in effect. A small number of women are enrolled in data processing technology, accounting and general business, and mid-management technology, but the actual percentage of female enrollment relative to male enrollment (22 percent, 26 percent, and 30 percent respectively) is too diminutive to be significant. It is readily capable of observation that 21 percent of all female students and 20 percent of all male students are enrolled in occupational programs as compared to college transfer curriculum programs. On this basis, it would appear that the Metropolitan Junior College District is meeting the occupational needs of the aggregate student body on an equal opportunity basis. This conclusion, however, is not justified when analysis is undertaken of the sex distribution of enrollment within each curriculum program. Clearly, the under-representation of women in the traditionally male-dominated fields is an indication of latent sex discrimination in higher education. Moreover, there is evidence of vacillation in educational and occupational decision making among female students as fully 50 percent of women students in the Metropolitan Junior College District demonstrate a tendency to postpone curriculum field selections until a later stage of college tenure. This phenomenen occurs with much less frequency among male students as 2,124 or 39 percent elected to delay curriculum field decision making until a later point in college tenure.

The third variable given consideration as an index of women's status in higher education is the sex distribution of women in terms of salary range ascription by occupational and transfer program degree attainment. Table III reveals that Business, Industrial, and Public Service occupational fields attract the greatest number of transfer program graduates. A more intensive analysis indicates, however, that whereas male transfer graduates are concentrated primarily in the Business and Industrial occupational fields with a mean salary range of $7,000 to $10,000, female transfer graduates exhibit a greater tendency to enter the Allied Health and Public Service fields at a mean salary range ascription of $5,000 to $9,000. Moreover, when review is undertaken of mean salary ranges attained by female transfer program graduates in selected occupational fields (Business and Public Service) as compared to male transfer graduates salaries in the same fields, it is readily apparent that mean female salaries are on the average $2,000 to $4,000 lower than mean male salaries.

Similar data trends are observed for male and female occupational program graduates: male graduates are disproportionately distributed in the Business, Industrial, and Public Service occupational fields while female graduates demonstrate an extremely high concentration in the Business and Allied Health fields. Once again, mean salaries of female graduates are on the average of $2,000 to $4,000 lower than mean salaries of male graduates in the Business and Public Service occupational fields. It is significant to note that women entering a field of prevailing female employment--the Allied Health field--still evidence a mean salary ascription range ($5,000 to $9,000) that is consistently lower than ascribed to males ($7,000 to $11,000) in the occupational fields of greatest masculine concentration (Business, Industrial, and Public Service fields). Clearly, these results indicate that sex discrimination is neither initiated in higher education nor terminated in higher education--it is a phenomenen rooted in the effects of early childhhod socialization for "appropriate" sex roles; reinforced through differential opportunities accorded females throughout higher education; and finalized in an equilibrium system prevalent in the economy as an institution of American society. A review

Table III. Full-Time Employment Categories and Salary Range (By Sex) of Transfer and Occupational Curriculum Program Graduates

DISTRICT AGGREGATE - TRANSFER PROGRAMS

	Business		Industrial		Allied Health		Public Service		Other	
Salary Range	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
$0-$2,999	-	3	2	-	-	-	1	-	-	-
3- 4,999	2	1	-	-	-	1	-	-	2	1
5- 6,999	3	6	1	-	-	1	3	4	2	1
7- 8,999	13	2	7	-	2	2	6	3	3	2
9 & Over	16	-	14	-	-	-	7	-	3	-
No response	2	-	-	-	-	-	1	-	-	-
TOTALS	36	12	24	0	2	4	18	7	10	4

DISTRICT AGGREGATE - OCCUPATIONAL PROGRAMS

	Business		Industrial		Allied Health		Public Service		Other	
Salary Range	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
$0-$2,999	-	-	-	-	-	1	-	-	3	1
3- 4,999	2	12	1	-	-	6	-	1	1	2
5- 6,999	9	16	2	1	1	10	1	4	3	1
7- 8,999	10	3	4	-	1	26	4	1	-	3
9 & Over	15	1	3	-	-	3	18	2	4	-
No response	-	-	-	-	-	-	-	2	-	-
TOTAL	36	32	10	1	2	46	23	10	11	7

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of the available literature relevant to sex discrimination in higher education and academe, (Rorhschild, 1971; Bernard, 1971; Bayer and Astin, 1972; Cross, 1972) offers firm support for the truism that women's status in the world of work and equal opportunity is determined far in advance as a function of life-phase socialization undertaken by significant other persons (e.g., parents, teachers, agemates, etc.).

The status equilibration model presented in the introduction to the study articulated a three-phase life sequence representative of socialization experience internalized by women in American society. The third phase of this model was devoted Adulthood (post college) as a life-phase inclusive of occupational selection and entrance as well as individual mobility within academe and the professions. A preliminary index of women's status in the professions relative to the employment status of women in the Metropolitan Junior College District is the sex distribution of non-academic personnel. Table IV reveals that a continual increase in non-academic employment personnel has occurred since the 1969-1970 academic year.

Table IV. Sex Distribution of Full-Time and Part-Time Non-Academic Personnel: 1969-1972

	Sex Breakdown				
Year and College	Male No.	Male %	Female No.	Female %	Total
1969-1970					
District	11	32	23	68	34
Longview	7	35	13	65	20
Maple Woods	8	38	13	62	21
Penn Valley	11	27	30	73	41
Total	37	32	79	68	116
1970-1971					
District	13	24	25	66	38
Longview	12	40	19	60	31
Maple Woods	9	33	18	67	27
Penn Valley	17	33	34	67	51
Total	51	35	96	65	147
1971-1972					
District	20	48	22	52	42
Longview	17	45	21	55	38
Maple Woods	13	41	19	59	32
Penn Valley	33	43	43	57	76
Total	83	44	105	56	188

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The table also reveals a slight increase (from 79 to 105 employees) in total number of women employees during the three-year time span but also a significant decrease (from 68 percent to 56 percent) in the percentage distribution of women employed in the Metropolitan Junior College District and its member colleges from 1969 to 1972. In short, although women employees have grown in number, employment of males has increased at a greater annual growth rate since the 1969-1970 academic year. Clearly, these data are indicative of a changing sex role composition relevant to non-academic occupational opportunities within the district and its member colleges. Therefore, several limitations are apparent in terms of non-academic employment status of women in the Metropolitan Junior College District:

1. Limitations are placed on the hiring of women in traditional female-dominated secretarial and clerical positions as a function of financial accountability in a resourceful multi-college organizational framework.

2. Limitations are placed on the employment of non-academic women in terms of the increasing number of male-dominated maintenance and service positions necessary to sustain continued progress in facilities development--the result being that sex composition of the non-academic labor force clearly changes in the direction of the male employee.

A fifth hypothesis of the women's status study postulated that women completing a secondary-level or college-level education enter into decision-making process with important ramifications for occupational status in higher education and the professions. Two questions emerge: should women pursue an advanced course of study at the undergraduate or graduate level or should a decision be made to forego higher education and enter the occupational marketplace? Those women who make the former choice (academic women) place major emphasis upon the attainment of administrative rank or faculty tenure within the public community college as a locus of higher education. Toward this end, data are presented in Table V relative to the status of women as measured by appointment to administrative positions in the Metropolitan Junior College District during temporal period 1964 through 1972.

Table V indicates that the eight women who maintain administrative positions in the district represent a percentage distribution of 17 percent of the total number of administrative personnel employed by the district and its member colleges. Of these eight women, six were appointed to two-year positions as department chairmen and only two (25 percent) were appointed (through promotion) to positions in general administration and managerial components of the organizational complex. Observers can rightfully raise the possibility that there are a number of causative factors which may account for the relative lack of representation of women in administrative positions. Some of these factors are as follows:

1. The market constriction in evidence relevant to qualified women available for specialized administrative positions.

2. Lack of motivation toward attainment of administrative rank due to the "fear of success" syndrome (Cross, 1971; Bayer and Astin, 1972; Horner, 1972; Feather-Atkinson, 1972).

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3. Lack of encouragement from parents, teachers, relatives, and age-mates toward aspiration for administrative positions.

4. Duplicate family and career responsibilities.

5. Opportunities for administrative internships and in-service training have been limited for women--particularly in occupational-technical education.

Table V. Status of Women in Administration in the Metropolitan Junior College District: 1971-1972

College and Administrative Classification	SEX			
	Male		Female	
LONGVIEW				
A. General Administration	4	100%	0	--
B. Managerial	0	--	0	--
C. Department Chairmen	4	67%	2	33%
MAPLE WOODS				
A. General Administration	4	100%	0	--
B. Managerial	1	100%	0	--
C. Department Chairmen	3	75%	1	25%
PENN VALLEY				
A. General Administration	8	89%	1	11%
B. Managerial	1	100%	0	--
C. Department Chairmen	7	70%	3	30%
DISTRICT				
A. General Administration	9	90%	1	10%
TOTAL	40	83%	8	17%

During the past decade a considerable amount of research activity has been conducted relative to the professional status of women faculty in higher education (Bernard, 1966; Wilson, 1966; Cross, 1971; Bayer and Astin, 1972). Articulated in terms of the Metropolitan Junior College District, the question becomes one of determination of the percentage of women on the full-time and part-time faculties of member colleges of the district. Table VI reveals that the percentage distribution of full-time women faculty (34 percent) and part-time faculty (30 percent) is indicative of district-wide imbalance in sex distribution of faculty. The imbalance assumes a greater level of gravity when a review is

Table VI. Sex Distribution of Full-Time and Part-Time Faculty of the Metropolitan Junior College District: 1969-1972

	ACADEMIC STATUS											
	FULL-TIME					PART-TIME				TOTAL		
1969-1970	Male		Female		Total	Male		Female		Male	Female	Total
Longview	31	78%	9	22%	40	29	80%	7	20%	36	60 79%	16 21%	76
Maple Woods	22	79%	6	21%	28	20	83%	4	17%	24	42 81%	10 19%	52
Penn Valley	51	61%	33	39%	84	75	77%	23	23%	98	126 69%	56 31%	182
TOTAL	104	68%	48	32%	152	124	78%	34	22%	158	228 74%	82 26%	310
1970-1971													
Longview	34	74%	12	26%	46	28	82%	6	18%	34	62 78%	18 22%	80
Maple Woods	30	88%	4	12%	34	26	72%	10	28%	36	56 80%	14 20%	70
Penn Valley	50	60%	36	40%	86	79	75%	27	25%	106	129 67%	63 33%	192
TOTAL	114	68%	52	32%	166	133	76%	42	24%	175	247 72%	94 28%	341
1971-1972													
Longview	51	80%	13	20%	64	43	74%	15	26%	58	94 77%	28 23%	122
Maple Woods	34	83%	7	17%	41	24	80%	6	20%	30	58 82%	13 18%	71
Penn Valley	65	53%	57	47%	122	76	66%	40	34%	116	141 59%	97 41%	238
TOTAL	150	66%	77	34%	227	143	70%	61	30%	209	293 68%	138 32%	431

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made of the percentage distribution of women faculty on a discipline-by-discipline basis. Large proportions of women are involved in the specialization fields of the humanities and education whereas an increasingly larger proportion of men are involved in the physical sciences, social sciences, and occupational curriculum programs.

A factor contributing to the imbalance, of course, is the continuing development of new occupational-technical curriculum programs requiring male faculty from traditionally male-dominated occupational fields: automotive technology, aeromechanics, administration of justice, and electronics, to name a few. Quite to the contrary, however, a primary factor contributing to the gradual increase (6 percent) in total number of women faculty employed by member colleges of the district from 1969 to 1972 is the increasing number of female-dominated occupational programs (e.g., nursing, dental assistant, day care, etc.) which have been developed during the past three years. The number of female-dominated occupational programs, it would appear, will continue to expand as federal, state, and local occupational markets begin to exhibit greater accountability to women as a minority group in American society.

Although data relevant to the sex distribution of faculties in institutions of higher education has received considerable attention in higher education research, it has systematically excluded knowledge relative to the nature and extent of faculty participation in institutional governance. It is a nationally recognized phenomenen, for example, that most educational decision-making personnel are just beginning to acknowledge the role and status of academic women in establishing educational policy let alone their importance in shaping institutional goals. Therefore, it is a matter of current concern that investigation be undertaken with respect to sex differentials among faculty involved in institutional governance (i.e., faculty involved in district and college committee structure).

When analysis is undertaken relative to the sex distribution of committee membership involved in district and internal college affairs (Tables VII and VIII) it is apparent that women are under-represented in terms of membership on district and college committees. As data indicate (Table VII) only 16 percent of the membership of district committees are women. Moreover, when a review is conducted of data relevant to the status of women in terms of membership on administrative-level committees, the finding comprise a skewed distribution with a major imbalance in evidence toward extensive male representation. Women are poorly represented on committees carrying decision-making authority, even if only advisory, and are seldom chosen to chair committees with a policy-making function.

Since membership in the Academic Senate is elective, it is conceivable that a small female membership could result from either a reluctance to serve in the organization or a failure to be elected by a predominantly male faculty subculture. It may well be that women possess few of the characteristics that underlie individual possession of academic authority; cosmopolitan background, administrative experience, research interest, and professional mobility. Therefore, when women are statistically matched with men on a variable that reflects authority in academic governance (Academic Senate membership), it is clear that they fall below men on a scale measuring level of authority, power, and influence relative to the academic decision-making process.

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Table VII. Sex Distribution of Committee Membership on Standing Committees of the Metropolitan Junior College District: 1971-1972

Committee	SEX			
	Male		Female	
Chancellor's Council	13	93%	1	7%
Instructional Coordinating Committee	13	81%	3	19%
Student Personnel Services Committee	7	100%	0	--
Affirmative Action Committee	16	76%	5	24%
Total	49	84%	9	16%

Table VIII. Sex Distribution of Membership Aggregate of the Academic Senate: 1971-1972

College	SEX			
	Male		Female	
Longview	4	80%	1	20%
Maple Woods	3	75%	1	25%
Penn Valley	8	75%	2	20%
Total	15	79%	4	21%

Discussion and Implications

The results of this study indicated that the status of women in higher education and the professions is predetermined as a function of early childhood socialization (by parents, teachers, administrators, and agemates) for traditional sex roles during adolescence and early adulthood. Traditionally, women's status in higher education and the professions has been defined chiefly in terms of a male-dominated academic reward system which places

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a high premium on aggressiveness, visibility, and credentialed scholarship--factors which are evaluated according to traditional sex-role status in American higher education. The findings, relevant to evaluating the status of women in the Metropolitan Junior College District, provide documentary evidence of imbalanced sex distribution in higher education. Observable differences occurred as men outnumbered women by almost a 3 to 2 ratio in terms of the sex distribution of the aggregate student body at member colleges of the district. Moreover, when analyses were conducted on a discipline-by-discipline basis, it was apparent that women are under-represented in traditionally male-dominated occupational curriculum programs (e.g., aviation maintenance, electronics, automotive technology, climate control technology, etc.) and heavily represented in the traditional women's occupational curriculum programs (nursing, dental assistant, day care, etc.). Significant differences between sex role status of men and women were also found on the following criterion measures:

1. Women graduates of transfer and occupational curriculum programs exhibit a greater tendency than men to enter low-salaried Allied Health and Public Service occupational fields. In fields of shared entry (i.e., Business and Public Service), men traditionally obtained higher entrance salaries.

2. Women in non-academic positions, over a three-year period, have evidenced a relative decrease in percentage of non-academic personnel.

3. Women were significantly under-represented in administrative positions in the Metropolitan Junior College District--causative factors are the market constriction relative to qualified female administrators, lack of individual motivation, duplicate family and career responsibilities, and lack of in-service training for administrative career opportunities.

4. The sex distribution of male and female faculty, on a discipline-by-discipline basis, is imbalanced as large proportions of women are involved in the specialization fields of the humanities and allied health fields whereas a predominantly male faculty are involved in the physical sciences, social sciences, and technological-based occupationsl programs.

5. The level of involvement of women in district and college committees and the Academic Senate is representative of a general lack of female participation in academic governance.

The relation of individual variables to the status of women in the Metropolitan Junior College District highlights the disadvantaged position of women in student, non-academic, administrative, and faculty subcultures of the district and its member colleges.

Educational Development Grants Program

The Board of Trustees of the Metropolitan Junior College District-Kansas City has authorized the allocation of $50,000 as a restricted fund for a faculty development grants program in 1971-1972 to support part-time faculty study and research. The program supports projects which contribute to professional growth with emphasis on the development of innovation and experimentation in teaching and adaptation of media to instruction.

In a time of unprecedented change, faculty members face the challenges of the explosion of knowledge, the revolution in media technology with its implications for teaching and

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learning, and deep and fundamental changes in society itself. Today faculty members must respond to increasing demands by students to play a larger role in all aspects of their learning and to an increasing proportion of students from economically and culturally deprived backgrounds who bring special needs which call for new approaches. More than ever before, opportunities are needed for faculty members to keep abreast of their fields, to develop research, to acquaint themselves with the new media, and to design and carry out innovation and experiments in their classrooms.

Toward this end the Educational Development Grants Program is designed to provide faculty in the district either singly or through joint cooperative efforts, an opportunity to engage in innovative approaches to the teaching-learning situation. Through development grants from the MJCD, instructors are encouraged to engage in research or experimental learning activities designed to have a positive impact on the learning process. Seventeen educational development grants were authorized for instructional research during the fall and spring semesters of the 1971-1972 academic year. Of these seventeen grants, twelve were scheduled for completion on or before September 1, 1972. A new round of educational development grants projects is scheduled for review on February 15.

These development grants are representative of many facets of media presentation: motion picture film, slides, audio recording, written documentary, tape cassettes, and compact package instructional models. The material results of completed projects hold great instructional promise for the district, its member colleges, and faculty personnel as at least seven projects have already been operationalized and developed for use in actual classroom instruction. For example, during the Fall Semester 1972 students at Longview Community College are using media tapes to develop effective listening and reading capacities for language improvement as well as developing accounting problem solution skills through the direct utilization of problem oriented computer systems programs. Counseling personnel at Maple Woods Community College have developed and are currently using in conjunction with students a study guide and cassette tapes for improvement of self-study habits.

Lastly, students at Penn Valley Community College are now being exposed to a self-pacing, self-instructional method in American Government which is based upon the use of a six-unit study manual, selected media presentations, and supplemental reading articles in order that a better understanding can be achieved of the complex political institution known as American Government. Moreover, faculty personnel in mathematics at Penn Valley Community College are using media tapes to introduce students to selected mathematical concepts in introductory calculus.

It is encouraging to report that in addition to the factor that educational development grants are adapted primarily for use in classroom facilities of member colleges of the Metropolitan Junior College District, one project has obtained regional acclaim and is currently being used in one form as a media presentation in the physical sciences curriculum at Longview Community College and in a second form as a sound-slide presentation to the general public (in cooperation with the Water Department of Kansas City, Missouri).

Next Issue

In the next issue of the Research Memorandum extensive review will be undertaken of a 1971-1972 Student Attrition Study as well as a 1973-1974 Enrollment Projection Study.

The Attrition Study focuses upon place of residence, sex, and enrollment status as

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influential determinants of both qualitative and quantitative measures of student attrition. The Enrollment Projection Study is devoted to a detailed consideration of stimulating and constraining factors impinging upon enrollment trends in the two-year college of American society. Primary attention is extended to the social, political, and economic miliue for higher education relative to regional, state, and federal levels of analysis.

Copies of research publications developed by the Office of Educational Development and Research are available upon request. Please address your inquiry to:

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